IN THE CLAIMS:

1. (currently amended) A method for prioritizing information packets for transfer across a switch, the method comprising:

at each switch input, accepting a plurality of variable length information packets having a ranked class of service (COS);

organizing the information packets into a plurality of queues differentiated by the COS of each information packet;

simultaneously performing a deficit round robin (DRR) analysis of the information packets at the head of each queue; [[and,]]

selecting an information packet for transfer in response to the simultaneous analysis;

parsing the information packets into lengths of one cell;

transferring one cell from the selected information packets every decision cycle.

transferring one cell every decision cycle until no further cells remain in the selected information packet; and,

after completing the transfer of the information packet cells, simultaneously performing a deficit round robin reanalysis of the information packets at the head of each queue.

2-5. canceled

6. (original) A method for prioritizing information packets for transfer across a switch, the method comprising:

at each switch input, accepting a plurality of variable length information packets having a ranked class of service (COS);

organizing the information packets into a plurality of queues differentiated by the COS of each information packet;

establishing a plurality of selection cycles per decision cycle;

simultaneously performing a deficit round robin (DRR) analysis of the information packets at the head of each queue in a plurality of selection cycles per decision cycle;

selecting an information packet for transfer in response to the simultaneous analysis;

parsing the information packets into lengths of one cell;

transferring one cell from the selected information packets every decision cycle;

transferring one cell every decision cycle until no further cells remain in the selected information packet; and,

after the information packet is transferred, simultaneously performing a deficit round robin reanalysis of the information packets at the head of each COS queue.

7. (original) The method of claim 6 wherein simultaneously performing a deficit round robin analysis of the information packets at the head of each queue includes analyzing information packets in response to the number of cells in each information packet.

8. (original) The method of claim 7 further comprising:

selecting an increment value for each of the plurality of queues, where each increment value corresponds to a selected number of cells; and,

wherein selecting an information packet for transfer in response to the simultaneous analysis includes comparing the number of cells in the information packet at the head of the queue to its corresponding increment value.

9. (original) The method of claim 8 wherein selecting an increment value for each of the plurality of queues includes selecting increment values with larger numbers of cells for higher ranking COS queues.

10. (original) The method of claim 8 wherein selecting an information packet for transfer in response to the simultaneous analysis includes comparing the number of cells in the information packet at the head of the queue to a corresponding total accumulation of increment values, accumulated in a plurality of selection cycles.

11. (original) The method of claim 10 wherein selecting an information packet for transfer in response to the simultaneous analysis includes:

for each queue, establishing a bank for banking increment values;

for each selection cycle, comparing the number of cells in the information packets at the head of each queue to a total accumulation,

where the total accumulation includes the increment value, plus previously banked increment values;

if the information packets have a number of cells less than, or equal to the total accumulation, making the information packet eligible for selection; and,

if information packets are eligible for selection from a plurality of queues, selecting the information packet in the queue using a selection criteria selected from the group including highest COS, least recently used, and event succession methods.

12. (original) The method of claim 11 wherein selecting an information packet for transfer in response to the simultaneous analysis includes:

if no information packets are selected, banking the total accumulation for each queue; and,

going to the next selection cycle.

13. (original) The method of claim 12 wherein accepting a plurality of information packets includes accepting information packets having a maximum number of cells;

wherein selecting increment values includes selecting a minimum increment value corresponding to a minimum number of cells; and,

wherein simultaneously performing a deficit round robin analysis of the information packets at the head of each queue includes simultaneously analyzing information packets in a maximum number of selection cycles every decision cycle, where the maximum number of

selection cycles, times the minimum increment value is greater than, or equal to the maximum number of cells in an information packet.

14. (original) The method of claim 13 further comprising:

following the transfer of the selected information packet, subtracting the number of cells in the transferred information packet from the bank of the queue from which the information packet was selected;

accepting a new information packet at the head of the queue from which the information packet was selected; and,

wherein simultaneously reanalyzing the information packets at the head of each queue includes analyzing the new information packet.

15. (currently amended) A switch system for prioritizing the transfer of information packets, the system comprising:

a queuing element having an input to accept a plurality of variable length information packets having a ranked class of service (COS), the queuing element having an output to supply the information packets organized into a plurality of queues differentiated by information packet COS; [[and,]]

an analyzer having a first input connected to the queuing element output, the analyzer simultaneously performing a deficit round robin (DRR) analysis of the information packets at the head of each queue, selecting an information packet for transfer in response to the simultaneous analysis of the queues, and supplying the selected information packet at an output;

a parser having an input connected to the output of the analyzer, the parser processing selected information packets in units of one cell, the parser having a second input to accept decision cycle timing signals and an output to transfer one cell from the selected information packet every decision cycle and to transfer one cell every decision cycle, until no further cells remain in the selected information packet;

wherein the parser completes the transfer of a selected information packet in a first decision cycle; and,

wherein the analyzer simultaneously performs a deficit round robin reanalysis of the information packets at the head of each COS queue in a second decision cycle, subsequent to the first decision cycle.

16-19. canceled

20. (currently amended) The system of claim [[19]] 15 wherein the analyzer has a second input to receive a decision cycle signal including a plurality of selection cycles, the analyzer simultaneously performing the deficit round robin analysis of the information packets at the head of each queue in each selection cycle.

21. (original) The system of claim 20 wherein the analyzer simultaneously performs a deficit round robin analysis of the information packets in response to the number of cells in each information packet.

22. (original) A switch system for prioritizing the transfer of information packets, the system comprising:

a queuing element having an input to accept a plurality of variable length information packets having a ranked class of service (COS), the queuing element having an output to supply the information packets organized into a plurality of queues differentiated by information packet COS;

an analyzer having a first input connected to the queuing element output, a second input to receive a decision cycle signal including a plurality of selection cycles, and a third input to accept increment value selection commands for each of the plurality of queues, where each increment value corresponds to a selected number of cells, the analyzer simultaneously performing a deficit round robin (DRR) analysis of the information packets at the head of each queue in response to the number of cells in each information packet by comparing the number of cells in the information packet at the head of the queue to its corresponding increment value, selecting an information packet for transfer in response to the simultaneous analysis of the queues in a plurality of selection cycles per decision cycle, and supplying the selected information packet at an output; and,

a parser having an input connected to the output of the analyzer, the parser processing selected information packets in units of one cell, the parser having a second input to accept decision cycle timing signal and an output to transfer one cell from the selected information packet every decision cycle, until no further cells remain in the selected information packet.

23. (original) The system of claim 22 wherein the analyzer accepts commands selecting increment values with larger numbers of cells for higher ranking COS queues.

24. (original) The system of claim 22 wherein the analyzer compares the number of cells in the information packet at the head of the queue to a corresponding total accumulation of increment values, accumulated in a plurality of selection cycles.

25. (original) The system of claim 24 further comprising:

a bank having an input to accept and add increment values every selection cycle, to banked accumulations for each queue, the bank having an output to supply a total accumulation for each queue;

wherein the analyzer has a second output connected to the bank input to supply increment values, and a third input connected to the bank output to accept the total accumulation values; and,

wherein the analyzer compares the number of cells in the information packets at the head of each queue to the respective total accumulation for each queue.

26. (original) The system of claim 25 wherein the analyzer makes information packets eligible for selection if the information packets have a number of cells less than, or equal to the total accumulation; and,

wherein the analyzer selects the information packet in the queue using a selection criteria selected from the group including highest

COS, least recently used, and event succession methods, if information packets are eligible from a plurality of queues.

27. (original) The system of claim 26 wherein the bank adds the increment value to the banked accumulation every selection cycle, for each queue that is not selected; and,

wherein the analyzer selects an information packet in a subsequent selection cycle by comparing the number of cells in the information packets at the head of each queue to the total accumulation for the corresponding queue.

28. (original) The system of claim 27 wherein the queuing element accepts information packets having a maximum number of cells;

wherein the analyzer receives commands to select a minimum increment value corresponding to a minimum number of cells; and,

wherein the analyzer simultaneously performs a deficit round robin analysis of the information packets in a maximum number of selection cycles every decision cycle, so that the maximum number of selection cycles, times the minimum increment value is greater than, or equal to the maximum number of cells in an information packet.

29. (original) The system of claim 28 wherein the bank, following the transfer of the selected information packet, accepts a withdrawal from the banked accumulation of the selected queue that equals the number of cells in the transferred information packet;

wherein the queuing element accepts a new information packet at the head of the selected queue; and,

wherein the analyzer simultaneously performs a deficit round robin reanalysis of the information packets at the head of each queue.

30. canceled